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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/904,950	07/12/2001	Yuichi Shimizu	9281-4115	4123

7590                    02/27/2003  
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EXAMINER
DINH, TUAN T

ART UNIT	PAPER NUMBER
2827	

DATE MAILED: 02/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	09/904,950	SHIMIZU ET AL.
<b>Examiner</b>	<b>Art Unit</b>	
	Tuan T Dinh	2827

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## ***Office Action Summary***

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)  Responsive to communication(s) filed on 12 July 2001 .

2a)  This action is **FINAL**.                    2b)  This action is non-final.

3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## **Disposition of Claims**

4)  Claim(s) 1-13 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5)  Claim(s) 1-9 is/are allowed.

6)  Claim(s) 10-13 is/are rejected.

7)  Claim(s) \_\_\_\_\_ is/are objected to.

8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on \_\_\_\_\_ is/are: a)  accepted or b)  objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)  The proposed drawing correction filed on \_\_\_\_\_ is: a)  approved b)  disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12)  The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

13)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a)  All b)  Some \* c)  None of:  
1.  Certified copies of the priority documents have been received.  
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

14)  Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a)  The translation of the foreign language provisional application has been received.

15)  Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1)  Notice of References Cited (PTO-892)  
2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3)  Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.  
4)  Interview Summary (PTO-413) Paper No(s). \_\_\_\_.  
5)  Notice of Informal Patent Application (PTO-152)  
6)  Other:

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 10-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Kane et al. (U. S. Patent 4,761,621).

As to claim 10, Kane discloses the circulator (column 3, line 16) as shown in figures 1-8 comprising:

a circuit board (301, column 3, line 62) obtained by laminating a plurality of dielectric substrates (303, column 3, line 63);

first, second, and third central conductors (leads 313, 401, 403-figure 4A) provided for the plurality of dielectric substrates at intervals of 120 degrees and partially intersecting with each other in the upper and lower directions;

a magnet (325) and a ferrite member (305) disposed above and below the intersection of the central conductors (see figure 3B);

first and second yokes (327,314-figure 3B) for covering the outside of the magnet; and covering the outside of the ferrite member, wherein one end of each of the first, second, and third central conductors (313,401,403) serves as an input and output terminal, the ends being disposed at intervals of 120 degrees; and adjacent input and output terminals are connected by inductive elements (coil 331, column 4, line 43).

As to claim 11, Kane discloses the circulator as shown in figures 1-8 wherein electrically conductive patterns are connected to the input and output terminals, and microstriplines for connecting the electrically conductive patterns are provided on the circuit board; and the microstriplines are formed of the inductive elements (column 4, lines 46-68, column 5, lines 1-22).

As to claim 12, Kane discloses the circulator as shown in figures 1-8 wherein the resonant frequency of a parallel resonant circuit formed of the inductive elements and capacitive components generated between the central conductors by the intersections of the central conductors is made equal to the frequency of a signal input to an input and output terminal (column 5, lines 43-68, column 6, lines 1-15).

As to claim 13, Kane discloses the circulator as shown in figures 1-8 wherein the resonant frequency of a parallel resonant circuit formed of the inductive elements and capacitive components generated between the central conductors by the intersections of the central conductors is made equal to the frequency of Y signal input to an input and output terminal (column 5, lines 43-68, column 6, lines 1-15).

***Allowable Subject Matter***

3. Claims 1-9 are allowed.
4. The following is an examiner's statement of reasons for allowance:

The references cited do not teach or suggest an electronic circuit unit having a circulator in combination comprising: a plurality of through holes vertically passing through the circuit board are filled with a magnetic material; and

a magnetic path is formed by the magnetic material between the first and second yokes disposed above and below the circuit board so as to cover the magnet and the ferrite member, to make a closed magnetic circuit.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Carr, Miura et al., and Krishnamurthy et al. disclose related art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan T Dinh whose telephone number is 703-306-5856. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David L. Talbott can be reached on 703-305-9883. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-1341 for regular communications and 703-305-1341 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

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**TD**  
February 24, 2003



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